

Isolated lake basins in Inner Asia is apparently larger than the older geographers had known. Many are described here, some quite small. Many more have evidently vanished in the process of desiccation—a process, by the way, which is going on in inner North America also. Great Salt Lake, for instance, was at no distant date much more extensive than it is now.

A little north of the old Lop Nor, Dr. Hedin made a discovery of some historical importance. He came upon the ruins of a considerable town at a place called Lōu Lan. The extreme dryness of the air had preserved fragments of houses, some bearing wood carvings, as well as domestic utensils, ornaments, and weapons, together with some coins and some wooden tablets and pieces of paper covered with writing. Dr. Hedin, himself disclaiming archaeological knowledge, gives reports on these relics from two competent scholars. The writing establishes the fact that the place was the Lōu Lan mentioned in Chinese records, and that there existed a town of some importance here between A. D. 200 and A. D. 300, a town in constant communication with northern China by routes across the Desert. It would seem "to have been destroyed by an inundation or a desert storm, or by both"; and the survivors apparently built another town in the same region, which in its turn perished in the fourteenth century. According to Chinese chronicles, this Lōu Lan was in still earlier times the seat of a principality, which, having been semi-independent, became subject to China shortly before the Christian era. This discovery, together with that of an ancient city (examined by Dr. A. M. Stein), near Khotan, a good way to the southwest of Lōu Lan, throws a certain amount of new light upon the very obscure history of Mongolia. At present there seem to be scarcely any inhabitants all through the vast stretch of country from the neighborhood of Lhasa on the south to the Thian Shan Mountains on the north; and indeed little animal life, save that, in places where water can be had, there occur some wild camels, wild asses, wild yaks, and two or three species of antelopes, as well as wolves and an occasional bear.

Dr. Hedin was only a few days' march from Lhasa when the Tibetan authorities stopped him. He was not ill-treated by them indeed, they behaved with a courtesy which may perhaps have been due to the reports that had reached Lhasa of the vengeance taken in China for the murder at Peking of a German envoy. Thus foiled, as indeed he half-expected to be, he turned to the west, and marched steadily, escorted part of the way by the Tibetans, through a little known part of southwestern Tibet, keeping a good way to the north of the Himalaya, till he turned sharp to the south, and crossed the range Ladakh, whence he descended into India. As respects scenery, this seems to have been the most interesting part of the whole journey. The book is embellished with a profusion of woodcuts, as well as with several maps. Of the translation it is sufficient to say that it does not read like a translation, but has the freshness and ease of a book composed in English. It is satisfactory to know that so skillful an explorer, being still a comparatively young man, contemplates a further expedition to the region for our knowledge of which he has done so much.

#### FAHIE'S GALILEO.

*Galileo: His Life and Works.* By J. J. Fahie. With portraits and illustrations. James Pott & Co. 8vo, pp. 451.

To one whose chief enjoyment of books is in reading them, who hates an *édition de luxe*, or any beauty of type or paper that may adorn a parlor table but incommodes a reader, and for whom, in the case of illustrations in which the artistic element is not the predominant consideration, nothing every way more satisfactory has been invented than good process reproductions of photographs, the dress of this volume will seem worthy of its subject, with its tasteful cover, light weight, paper really better than most of the old linen paper, legible type, graceful and free from every kind of affectation, and with black ink. It is from the Edinburgh Press. In those respects in which Mr. Fahie's 'History of Wireless Telegraphy' made us fear this book might be weak, it turns out to be particularly strong; while in some of those respects in which our expectations ran high, we find ourselves a little disappointed. We are not disappointed, however, in finding very scrupulous care and intelligence in getting the events of Galileo's life accurately recorded in every detail. It is safe to say that the history of the persecution here at last takes substantially its definitive shape. For the first time we feel confident of really understanding that history.

The author acknowledges great aid from Professor Favaro, whose stupendous labors in Galileology are so famous; and it would seem, from the notes, that Favaro may perhaps have read and minutely annotated Mr. Fahie's MS. There is certainly no one volume of Favaro's own that gives the unitary conception of Galileo's life that this does. It is necessarily more or less a compilation from Favaro; but there are places where the author successfully maintains somewhat different views. It is on the account of the persecution that he has chiefly laid out his resources, and shows really high literary qualities. He is eminently sane, not dying into a passion with the dead, but painting the crime calmly in its true colors, unglorized by any superficial excuses. He looks upon Galileo, not as if his duty consisted in making him a fine subject for a melodrama, but as what might be called, in theatrical parlance, a "practicable" man, like a door or window that will really open and shut. These are what we call the qualities of literary skill in the book. The reviewer took it up late in the evening, and laid it down at half-past six in the morning.

Unfortunately, so much pains has been expended by the author on this great event and on getting all the little facts of the biography right, that not quite so much energy seems to have been left for accuracy in other directions. One cannot say it is a heinous offence to call Simplicius (the Greek commentator, we mean, not Galileo's personage) a Sicilian; but still it puts a bad mark against the account of accuracy. In a sketch of the history of the Magnet down to and including Gilbert, no mention is made of Petrus Peregrinus, from whom Gilbert stole his best experiments. These are the merest trifles; yet even smaller faults are not altogether without importance when they relate to the subjects of Galileo's discoveries. In noticing the Italian's inven-

tion of the telescope, late in August, 1609, near eleven months after Lipperley in Holland received a patent for a similar invention, it might have been worth mention that on February 14, 1610, a letter, of which the original happens to be extant, was written to remind Thomas Harriotts of a former promise to send one of the "perspective cylinders" he was then making to an acquaintance. Galileo's *bilancetta*, which was simply an account of a balance for weighing an object under water, in order to find its specific gravity, was published in 1644. It is here said (no doubt with good reason) that it was invented in 1586, but it would have been well to explain just how that date has been ascertained, and to state that in that very year Simon Steven published the very same invention in Leyden. Galileo was in all probability right in surmising that the method had been known to Archimedes. We are told that Galileo discovered the principle of virtual velocities. No doubt; just as there were three kings of Chiekeraboo. But a good half of the virtue of that principle consists, not in perceiving it in a few simple cases, but in generalizing it into the universal key to dynamics. To say that Galileo knew the parallelogram of forces, is not in perfect strictness true; but if that is to be said, it becomes downright misleading to say that "he failed to grasp the fact that that acceleration which in the case of motion under gravity he so closely examined, might be made a means of measuring the magnitude of the force producing the motion." Galileo had perfectly clear conceptions of velocity and acceleration, and of their parallelograms. He had, for example, a perfectly clear conception of what is called "*g*," and never would have been guilty of trying to express it in pounds' weight. He had a tolerable notion of pressure, and, of course, some idea of a force applied to a part of the surface of a solid, etc. But he seems to have had no idea at all of a moving or effective force. He never spoke of gravity as a force; and if he had ever heard anybody so speak, he would probably, at first, have accused him of talking metaphysics. Consequently, his notion of the parallelogram of forces must have been obscure. The truth is, that Mr. Fahie, though he makes a praiseworthy effort to do so, never properly appreciates Galileo's wonderful command of dynamical conceptions, wherein lay his chief greatness, and which formed the warp of his intellectual life. The inevitable consequence is that his portraiture is, with all its merits, hardly more than mediocre. It is true that he quotes what Lagrange says (calling him an Italian, as he might so call Napoleon); but if he had fully understood what it amounted to, he would have erased the ninth and tenth words of his book: "Galileo Galilei, one of the earliest and perhaps one of the greatest of experimental philosophers of the modern world," etc.

The principal facts now established as to Galileo's dealings with the Inquisition are these: From 1612 and earlier the storm had been gathering. The Jesuits and the Aristotelians were bent upon crushing him, because he put them into the ridiculous position of refusing to see what was before their eyes. But all the cultivated people, the Grand Duke, Cardinal Matteo Barberini (afterward Pope Urban VIII.), Cardinal

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Federigo Borromeo, and the like warmly supported him. On the 5th of February, 1615, an unsigned denunciation of him was lodged with the Inquisition. Early in December he voluntarily set out for Rome. On the 19th of February the Qualifiers for the Holy Office were called upon for an opinion substantially as to the Copernican proposition. On the 24th they reported it to be heretical. On the 25th, Cardinal Bellarmine was directed "to summon before him the said Galileo and admonish him to abandon the said opinion; and in case of refusal the Commissary [i. e., the most Rev. Michelangelo Seghizzi] is to intimate to him, before a notary and witnesses, a command altogether to abstain from teaching or defending the said opinion, and even from discussing it; and if he do not acquiesce therein, he is to be imprisoned." Note that if he consented to "abandon" the said opinion there was to be no such intimation; and if there was an intimation, it must be executed before a notary and witnesses to be of effect. But Galileo at once agreed to abandon the theory. On March 3 a decree of the Inquisition was published, of which the preamble states that "Galileo Galilei, mathematician, had, in terms of the order of the Holy Congregation, been admonished to abandon the opinion he has hitherto held, and had acquiesced therein." On May 26th Cardinal Bellarmine delivered to Galileo a formal written statement to the effect that "Signor Galileo Galilei has not abjured [but only promised to abandon] . . . any opinion or doctrine held by him, . . . but only the declaration made by the Holy Father . . . has been communicated to him . . . that the opinion attributed to Copernicus . . . is contrary to the Holy Scriptures, and therefore cannot be defended or held." This obliged Galileo to abandon his researches and writings; and his health suffered seriously, although he was allowed to use the proposition as a "hypothesis."

Events led to his writing 'Il Saggiatore,' and in October, 1622, it was sent to a member of the Accademia dei Lincei, and was passed from hand to hand, and various corrections were suggested and accepted with a view to rendering it acceptable to the Inquisition. In February, 1623, the Papal imprimatur was attached to it, and later in the year it was published. Meantime, on August 8, Galileo's adherent and admirer, Cardinal Maffeo Barberini, had been elected Pope, taking the name of Urban VIII. In April, 1624, Galileo went to Rome and had six long interviews with this new Pope, endeavoring to have the prohibition of 1616 removed, but to no purpose. The Pope wrote officially to the Grand Duke and expressed his sense of what the world owed to Galileo's discoveries, as well as his great affection for him. Galileo returned to Florence, where he drew up a reply to an attack on the Copernican system. This was handed about in manuscript. The Pope, having been shown some passages, expressed his high commendation, and on another occasion remarked to a cardinal that the Copernican system had never been condemned as heretical, but only as rash. Such things convinced Galileo that he might find means to express himself; and in 1626, he began to write his famous 'Dialogo intorno ai due Massimi Sistemi del Mondo, Tolemaico e Copernicano,' which fully occupied

him until May, 1630, when he repaired to Rome in order to find under what conditions it could be published. He had audience with the Pope, who assented to the publication under three conditions: first, the title must not be misleading (Galileo had proposed to call it 'Dialogues on the Tides'); secondly, the subject must be treated from a purely hypothetical standpoint; and thirdly, it must be wound up by the argument that since God is all-powerful, no facts can be a necessary proof of any independent facts. Certainly, no logician to-day can withhold his assent to that; and certain it is that this argument was absolutely vital to a good Catholic then, and so remains to this day.

There was nothing for Galileo to do but to make the required alterations of the title, the introduction, and the conclusion. The last was a most difficult task, for he held the Pope's opinion in supreme contempt, and yet it would not do so to treat him. He ought to have seen that this situation forced upon him, what good controversial rhetoric required, the genuine putting of himself in the Pope's attitude of mind, so as really to feel what the reasons were which weighed with the Pope. Otherwise, in attempting to restate that argument, he would give a travesty of it. If he found it impossible to conform to that condition, then the one course open to him was to betake himself to Venice, which republic was ready to receive him with open arms, and to protect him at the risk of an interdict, if necessary.

In the Dialogue, all the arguments (including the Pope's) against Copernicus are put into the mouth of a character called "Simplicius." There was a certain appropriateness in this, since the best arguments of the Aristotelians were drawn from the commentary on the 'De Celo' by the real Simplicius. Yet it was bad rhetoric. The manuscript was submitted to the papal censor, who, after causing it to be thoroughly revised by his assistant, all passages being altered that were at all objectionable (as Galileo had desired), finally very carefully examined it himself, and attached his imprimatur for its publication in Rome, with the understanding that an introductory and a concluding passage should be inserted by Galileo, such as the Pope had required. The affair having come to this stage late in June, Galileo returned to Florence.

The prevalence of the plague and a particular death hindered the publication in Rome, and in August Galileo decided to have the book printed in Florence. On communicating with the Roman censor, that dignitary said he must first see the complete book. But the plague had rendered the mails so uncertain that Galileo proposed to send instead only the new preface and conclusion, suggesting that some person in Florence be deputed to reexamine the body of the work. This proposition was acceded to. The counsellor of the Inquisition in Florence went through the body of it with the minutest attention, and declared there was nothing in it that could give the slightest umbrage to anybody. The Roman censor neglected to attend to the introductory and concluding portions sent to him, until July, 1631, when the Pope personally ordered him to approve those parts at once, with permission to alter the wording in any way Galileo might desire, the substance re-

maining as it was. After another complete reexamination in Florence, the final imprimatur was attached, and the book was published toward the end of February, 1632.

During the summer the Jesuits laid their plans deep to bring Galileo to ruin, and, in all that followed, the Pope (having, no doubt, come to believe that Galileo's statement of his argument was ironical and satirical) manifested an intense personal vindictiveness, which was never relaxed as long as Galileo lived, and whose effects were only a little mollified under such circumstances that not even his passion and the inherent littleness of his soul could hide from him the general contempt that he was in danger of bringing upon himself. In August, 1632, further sale of the Dialogue was forbidden, and a papal commission was appointed to examine the book. This commission reported during the next month, and in this report for the first time appears the statement that, in 1616, Galileo had been enjoined from ever holding, teaching, or defending the Copernican doctrine. It appears that the commission, upon looking at the records of the proceedings of 1616, came upon an unsigned *compte rendu* or protocol in the handwriting of the commissary-general of the Holy Office, who then acted as secretary, which failed to say that Galileo had submitted to the admonition of Cardinal Bellarmine; and which stated that the next step had been taken, namely, that said commissary had, before witnesses, enjoined Galileo, under pain of further proceedings, never to hold, teach, or defend the opinion. But nothing is said about a notary, nor are any other witnesses but Cardinal Bellarmine named. He had formally denied that any such thing took place, and was now dead. It has been supposed that this minute was a forgery. Favaro says that it cannot be so; but not being signed, it was without legal value. Nor does the minute, such as it is, represent the injunction to have been executed according to the form prescribed by the Holy Congregation; so that that injunction, if it had been so delivered, would be extra-legal. This document came as a complete surprise to all parties, and Galileo believed it to be a forgery. Pope Urban VIII. himself, who had taken part in the proceedings of 1616, had repeatedly discussed with Galileo the doctrine which that minute represented Galileo to have been forbidden to discuss. There is no doubt, therefore, that the proceedings of 1632 and 1633, basing themselves, as they did, on that minute, were contrary to the law of the Church.

On October 1, Galileo was summoned to appear during that month before the commissary-general of the Inquisition, in Rome. There were various delays, and he did not arrive at the Tuscan embassy in Rome until the 13th of February, where he begged leave to remain; and this was granted for the time being, under restrictions. On April 12 he appeared before the Inquisition. From that day until the end of the month he was held prisoner in the walls of the Inquisition, but was allowed his 'servant,' and was well treated. Owing to the intense malignity displayed by the Pope, Galileo's friends, in fear for his life, advised him simply to admit everything, and to submit to everything. This he did at his second examination of April 23, and on his third appearance of May 10. On June 16

the Pope held a meeting of the Congregation, at which it was decided to make Galileo confess his evil intention under threat of torture, and if that failed, to proceed further—that is, to burn him alive; for that is what it undoubtedly would have come to. Catholics may take such comfort as they can that this did not happen. On June 21 Galileo appeared once more, and, being threatened with torture, replied, "I am here to obey," and acquiesced in everything. He was then imprisoned. On June 22 he was made publicly to confess, and recant upon his knees. On the 6th of July he was allowed to retire to Siena, to the house of Archbishop Piccolomini, where he arrived on the 9th. He remained, however, wherever he was, a prisoner of the Inquisition all the rest of his life.

*The Story of a Soldier's Life.* By Field Marshal Viscount Wolseley. Charles Scribner's Sons. 1903.

As far as the story goes, the reader will find this an interesting book. It describes a military experience which began in 1852 in the Burmese campaign of that year. Then follow the Crimean war of 1854-56, the Indian mutiny of 1857-59, the China war of 1860, the Red River expedition of 1870, and the Ashantee war of 1873-74; and if more be needed, there is promise of another volume to round out the author's career, and, presumably, to give an account of the fruitless expedition undertaken for the relief of Gordon in 1885. The pictures of military life under these widely differing climates and conditions are admirably drawn, the hair-breadth 'scapes are exciting enough, and it is only occasionally that the superabundance of detail becomes tedious. Apart from purely military events, moreover, we have an account of a shipwreck, of a visit to Japan in 1860, and of a residence of some years in Canada and the United States from 1862 to 1870.

Coming to matters of opinion, we are reminded of the student who endeavored to solve all the problems in mechanics which he could not understand by the action of the common pump, which he had completely mastered. Lord Wolseley's common pump is a belief that war is not what, Sherman called it, but, on the contrary, a good and desirable thing in itself. This doctrine is reiterated in some form or other in almost every chapter; and from it flow, naturally enough, certain corollaries, to wit, that Wellington and Napoleon were the greatest men that ever lived; that no civilian should be appointed war minister, and that England should adopt compulsory military service and cultivate glory in order to avoid becoming "a jellyfish." Early in the first volume we meet the common pump: "Surely, war, with all its horrors, excites a healthy influence on all classes of society. . . . War is the greatest purifier to the race or nation that has reached the verge of overrefinement, of excessive civilization." A curious doctrine, certainly, but one that would appeal more strongly to the lay mind if Lord Wolseley had given a few instances of nations that have reached the verge of overrefinement and excessive civilization. And, to begin with, how does he define excessive civilization? Does any modern nation suffer from such a disease? Is there not, on the contrary, a wide

discrepancy between the results actually achieved by civilization and the aspirations and ideals of the wiser and better members of all modern communities? Has it not always been so in the past also? And even if it were otherwise, and nations really suffered from this imaginary disease, can any one who has read history imagine that the situation would be improved by war?

The following quotation gives another frequently recurring outcrop of the main doctrine: "These men die that England should be great, and they die for her without a murmur, and yet it is their valor and their self-sacrifice that enable home tradesmen to make fortunes, live at ease, and to marry their sons and daughters into gentle families." This is, of course, ridiculous claptrap. As a matter of fact, men become soldiers partly from innate love of fighting and partly because they are incapable of success as "home tradesmen," or in any other calling. They die on the field of battle because that is one of the hazards of their business; but it would be safe to say that Tommy Atkins is more interested in beer and tobacco than in anything so abstract and intangible as the greatness of England.

Passing from the main doctrine to the corollaries, there is an interesting statement made about Wellington which acquires additional importance from recent discussions of the vexed question of Waterloo. There is said to be written evidence to show that, some years before his death, when there was danger of war between France and Prussia, the King of Prussia asked him to take command of his army, owing to the dearth of first-class military talent in Berlin. The Duke was willing, but the danger passed, and the war was deferred for a generation. Of Napoleon, Lord Wolseley writes, with curious inconsistency, that impartial men must put him by himself and in front of all human beings; and then adds that "his course of action was absolutely untrammelled by any fixed laws of right or wrong or any consideration for others."

The dreadful results of the unprepared condition in which England entered upon the Crimean war give Lord Wolseley a good opportunity to preach on the folly of allowing a civilian to direct military affairs. He also condemns in strong language the incapacity of the English officers of that period, who acquired their rank under the purchase system and by family influence, without adequate training. The only war minister for whom he has a good word to say is Mr. Cardwell, who abolished the purchase system in 1873, and to whose scheme of an army reserve he gives the credit for England's ability to put 200,000 men in the field during the Boer war. In 1862 Lord Wolseley paid a visit to the Confederacy, and here again he found a notable example of the disastrous results of civilian control. His theory is that if Lee had not been overruled by President Davis the issue of this conflict might have been different. Lord Wolseley's ideas about this country and its inhabitants have evidently undergone considerable change in the past forty years. During the war his sympathies were strongly in favor of the South, and he was much impressed by the feebleness of the Northern generals. Since those days many things have changed, and he has reached the conclusion that the American army, so far as

its members go, is the finest in the world. He believes that the future of the world lies between the Chinese and the people of the United States, and in regard to the latter he is good enough to express the following noble sentiments: "Thank heaven they speak English [this is a specially gratifying admission], are governed by an English system of laws, and profess the same regard that we have for what both understand by fair play in all national as well as all private business."

Of wit and humor Lord Wolseley is not prodigal, but he tells a good story of Soyer, the celebrated French cook, who was sent out to the Crimea to give soldiers lessons in the culinary art. It seems that he had had an ill-tempered wife, and when she died he placed over her grave a stone with the simple but significant inscription: "Soyez tranquille." Another bon-mot is the message sent by Lord Clyde's A. B. C. after the relief of Lucknow. "Nunc fortunatus sum," presumably to be rendered, "I am in luck now."

On page 2, volume II, we are told that Lord Clyde supported the candidature of Sir William Mansfield for command in the China campaign, but at page 5 it is stated that the question was left to Lord Clyde's decision and that he wisely made choice of Sir Hope Grant. We note, also, a few misprints: Guatma for Guatemala; Staunton for Stanton; Westpoint for West Point.

*Benjamin Disraeli: An Unconventional Biography.* By Wilfrid Meynell. With forty illustrations, including two photographic plates. D. Appleton & Co. 1903.

Mr. Meynell is right in calling his life of Disraeli unconventional. To accord with the conventions of biographical writing, it would need to be rearranged, if not rewritten. To say nothing of the author's style, Disraeli's "last days" come before his "early travels," and we have a hundred and fifty pages of "his talk from youth to old age" before we reach any narrative of his public life. This gives the whole volume a disorderly and disconnected effect, which is the greater pity because it really contains materials for an excellent picture of Disraeli. But Mr. Meynell is altogether too hurried as well as too extravagant and too partisan to do justice to his subject. He speaks of himself in a wild dedication as a "Dizzy-worshipper," and so he is. But worshippers are not necessarily good biographers. For one thing, they are apt to be deficient in a sense of humor, and to our mind no one can possibly write well about Disraeli who has not a very strong sense of the humorous. Nevertheless, Mr. Meynell has, we think, done Disraeli's memory a good turn, for he has given us pretty much everything that he could collect about him, and now that party rancor is at an end, most that remains of Disraeli is entertaining and amusing, or at least curious.

With every new life of him it is the custom for hostile critics to endeavor to construct some plausible theory to account for his amazing political success in becoming the statesman of the latter-day English Tories, although he was an alien, a complete *novus homo*, an adventurer, and a Jew. Mr. Meynell's theory seems to be that he was really a man of profound political principles, and foresaw before even